

ABSTRACT OF THE DISCLOSURE

A magnetic bearing device has a rotor, electromagnets that control axial/radial positions of the rotor, and a power source that supplies power to the electromagnets. A switching circuit switches a voltage of a common node connected to each one end of the electromagnets. The switching circuit includes a first switch element that connects and disconnects between one end of the power source and the common node, and a first rectifier element connected between the other end of the power source and the common node. An excitation control circuit controls excitation of each of the electromagnets by a supply current that flows through the electromagnets in one direction or a regenerated current that flows through the electromagnets in one direction. The excitation control circuit includes a second switch element that connects and disconnects between the other end of one of the electromagnets and the other end of the power source, and a second rectifier element connected between the other end of one of the electromagnets and the one end of the power source.